

Comments on Durst's article

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I would like to begin by briefly reviewing the assumptions and hypotheses the NSM approach is predicated on. The goal of this exercise is to understand how these are interrelated, what hinges on every one of them, and what consequences arise from discarding an assumption or disproving a hypothesis. This process defines a number of projects which all agree up to some point and then depart. *Prima facie*, all of these constitute legitimate avenues of inquiry. My aim is to evaluate the decisions made within the NSM program vis-à-vis these alternatives, and to do so from a particular perspective – that of a field worker dedicated to the study of semantics in Non-Indo-European languages and of a semantic typologist interested in variation and universals of semantic representations across languages. It should be clear from the outset that NSM has made contributions to the crosslinguistic perspective in semantics unsurpassed by those of any other framework (in particular, Goddard & Wierzbicka (eds.) 1994, 2002; Goddard (ed.) 1997) – so my interest should not come as a surprise.

NSM takes a mentalist stance – it views meaning as a relation between expressions or utterances and internal representations in the minds of speakers and hearers. As in other mentalist frameworks (e.g., Fodor's (1975) 'Language of Thought', Jackendoff's (1983, 1990, 1997, 2002) 'Conceptual Semantics', Langacker's (1987) 'Cognitive Grammar'), the relation is viewed as a symbolic mapping - that is, there is assumed to be a fixed or rule-governed association between expressions and concepts or the like, independent of communicative intentions. This contrasts with the much richer cognitive reality envisioned in interactionist approaches (chiefly, Austin 1962 and Grice 1989) which view meaning as the communicative intentions of rational agents (this has important consequences to which I return shortly).

A third perspective that has generated much work in contemporary linguistic semantics, the view of meaning as denotation, i.e., as a relation between utterances and states of affairs in external reality (which may be only imagined, but can still be isolated as 'intentional' correlates of speakers' and hearers' mental states), in the tradition of Carnap, Frege, Montague, Russell, Tarsky, and many others, is routinely dismissed by NSM scholars. Textbook-like expositions of the NSM method (e.g., Goddard 1998 and Wierzbicka 1996) do not even offer arguments here (compare this to the extensive discussions elsewhere in the mentalist camp, e.g., in Jackendoff 2002 and Lakoff 1987). Durst (pp. 19-20), citing Wierzbicka (1985), suggests a single reason why Fregean senses (mentalist meanings) cannot be reduced to denotation – because senses may come in lexicalized packages charged with connotations.

I agree that the model-theoretic approach of Carnap, Tarsky, and Montague does not adequately capture sense (it bypasses sense with intensions, functions that assign extensions to expressions across possible worlds; see Löbner 2002: 236-247 for a concise criticism). But my perspective here is that of a field worker studying semantics in languages for which he has no native speaker intuitions. Lacking direct access to the natives' mental representations, extensional data is all I can go by. The best I can do is to try to infer senses from there. The method of "weeding out" non-truth-conditional meaning components (implicatures, presuppositions, connotations), under the assumption that whatever is the sense of an expression, these are definitely *not* part of it, has proven

surprisingly productive in my work (cf., e.g., Bohnemeyer 1998b, 2003; Bohnemeyer & Swift in press). Let us call this technique *truth-conditional reduction* for convenience; I compare it to NSM's 'reductive paraphrase' technique below.

I would like to insert here that I view the problem of reference as severely underrated in mentalist work in general (but see Fauconnier 1997 and Jackendoff 2002: 378-421 for promising attempts at dealing with issues in referential semantics). It would seem that generating intersubjectively successful references to "stuff out there" may well have been the single most consequential innovation in the evolution of humankind (cf. Deacon 1997). And despite Durst's (*ibid.*) bold claim it is not obvious to me that reference is predictable from sense. The bulk of linguistic reference is fundamentally context dependent (indexicals, definite descriptions) or effected by proper names. Add to that the potential dependence of reference on the contextual resolution of implicatures (see Levinson 2000: 165-260 for examples and discussion) or lexical ambiguity and it becomes rapidly clear that just as sense cannot be reduced to reference, neither can reference be reduced to sense.

Where NSM parts company with much of the rest of the mentalist camp is in its insistence in the explicability of sense. No other move defines the program as much as this does, in my view. Fodor (1975, 1981, 1983) views the concepts that internally encode linguistic meaning as symbolic and intentional (in the sense that they are representations *of* – typically external – states of affairs), but argues that a large stock of them are primitive, unlearnable, and inexplicable. Jackendoff (1997, 2002) rejects the idea that 'Conceptual Structure' *has* meaning – in the sense that it affords representations of external states of affairs – outright. For him, Conceptual Structure *is* meaning due to the fact that it interfaces with syntax and that the mind/brain processes it. The goal of semantic theory is to explain how the mind/brain does that. Semantic "phenomena" – native speaker judgments about synonymy, anomaly, ambiguity, and so forth – constitute the data that the theory has to account for in the process; but the task of explicating meaning is one that Jackendoff would presumably gladly concede to theologians and literary critics.

NSM holds – with structuralists such as Jakobson (1960) – that the sense of an expression can be captured in paraphrases by synonymous expressions (Goddard's 1994: 7 'Semiotic Principle'). No other contemporary approach to linguistic semantics attaches much significance to paraphrase as an analytical tool, but in NSM it gains special importance due to the 'Principle of Discrete and Exhaustive Analysis' (Goddard 1994: 8), according to which the meaning of all linguistic expressions can be paraphrased exhaustively and without circularity. This principle is trivially unsatisfiable unless a class of systematic exceptions is postulated – meanings that are considered primitives, such that all other expressions can be paraphrased by combinations of these; Goddard's (*ibid.*) 'Semantic Primitives Principle' does just that. This combination of principles is in fact compatible with Fodor's position, except that the set of semantic primes is assumed to be quite small in NSM (from Wierzbicka's (1972) original 14 to Goddard's (2002) 60). Since there is no specific upper limit to the number of primes, the three principles that form the core of NSM theory are not strictly testable. One could argue that after more than three decades of analyses in a wide variety of domains, it should have become evident if the principles were untenable except under a set of primes so large as to render the approach uninteresting. And that has not happened.

Unfortunately, another problem reduces the falsifiability of the core of the theory much more seriously – the lack of evaluation criteria for NSM’s ‘reductive paraphrases’ (i.e., paraphrases in terms of putative primes), other than those theory-internal ones discussed by Durst in section 3. Let me adduce a simple and, as I think, telling example: the treatment of color terms. Consider Wierzbicka’s (1996: 306) analysis of *green*, as quoted by Durst (p. 19):

- (1) X is green. =
in some places many things grow out of the ground
when one sees things like X one can think of this

Presumably this is meant along the lines of something like ‘The color of X is that of grass’. Reference to color is avoided since the sense of *color* is not assumed to be a prime. But as the example shows, it is very difficult to paraphrase. What does it mean that one can think of green things when one sees green grass? I can think of green grass without seeing anything green, and I can stare at any number of green things without thinking of grass. And direct reference to grass is avoided for the same reason as direct reference to color and because grass is not always green everywhere. But how are we to know that a forest of leafless trees is not a good example of the kind of places intended in the first line of the paraphrase?

There are two points that emerge from this. First, NSM’s reductive paraphrases are not constrained by any clear criterion of synonymy. In (1), *explanans* and *explanandum* do not entail each other, they do not have the same truth conditions, and I find it hard to believe that they map into the same mental representation – however we are supposed to test *that*. And secondly, color terms seem a bona fide case in point for Fodor’s and Jackendoff’s rejection of the general explicability of senses. It seems obvious to me that *green* maps into a cognitive category generated by the vision faculty (Kay & McDaniel 1978), and since this category does not have any discrete counterpart in nature, there is nothing more to be said about this. But this immediately raises very interesting questions: are the bulk of lexical meanings like those of color terms, mapping into categories only the mind “makes sense of”, or can the bulk of lexical meanings be decomposed with reference to only a small set of such inexplicable meanings, as NSM maintains? And which kinds of senses end up on which side of this divide? It strikes me that the possible impact of empirical answers to these questions on our understanding of semantics and the mind in general can hardly be exaggerated. And the NSM program is exactly what is called for to find such answers – if only the technique of reductive paraphrase were subjected to rigorous verifiability!

What if Jerry Fodor turns out to be right and semantic primes are not the exception but the rule in lexical semantics – will the sky fall down on semantic theory? The almost religious fervor with which some proponents of NSM have defended the small sets of primes proposed at the various stages of the theory might lead one to expect that. But in fact, the work of Fodor and Jackendoff, along that of Bierwisch, Lakoff, Langacker, Pinker, and so many others, has already demonstrated that it is by all means possible to construct insightful mentalist theories of sense semantics without any assumptions of explicability. Modern chemists accept that the primitives of their research fall not within the domain of their methods, but in that of physics. Mentalist semanticists would be in the same position with respect to cognitive psychology.

However, I'm not convinced that this would be the outcome. I think there might be much interesting middle ground to be explored between Fodor's and Wierzbicka's positions. Even within a single lexical unit we might discover sense components that directly tap into internal cognition and others that do not. On the division of labor between internal representations and a genuinely linguistic semantics advocated by Bierwisch (1996), Levinson (1997), and Pinker (1989) (each for different reasons), this is exactly what I would expect to find. One important reason why I find myself attracted to these proposals is that they permit a smooth reconciliation between language-independent cognitive representations and language-particular semantics. Which brings us to the issue I'm most keenly concerned with here – NSM's crosslinguistic hypotheses.

NSM has developed a very attractive program for crosslinguistic research: isolate the semantic primes and their syntax within each language; then compare the sets across languages. It is hypothesized that the primes and their grammars are isomorphic across languages (Goddard's 1994: 12 'Expressive Equivalence' and 'Isomorphism' principles). That semantic primitives are universal is certainly a natural assumption within NSM, given their presumed cognitive status. Furthermore, the primes are predicted to be universally lexicalized (Goddard's 1994: 13 'Strong Lexicalization Hypothesis' (SLH)). This is probably the most interesting hypothesis generated by the NSM program, just simply because it is the least likely one to be borne out. It is all the more important to realize that nothing in the methodological assumptions reviewed so far entails this hypothesis. Only once a fourth assumption is added to the core of the theory, Goddard's (1994: 10) 'Natural Language Principle', does the core become dependent on whether the SLH can be defended. The 'Natural Language Principle' states that the expressions of semantic primes of a language and their syntax constitute a proper subset of that language, such that that subset can serve as the metalanguage of semantic analysis for the language (hence the name of the theory, 'Natural Semantic Metalanguage'). If the SLH is untenable – as I am convinced is the case – then so is the Natural Language Principle. The remainder of my commentary is devoted to arguing that the benefits of giving up the SLH might in fact outweigh the costs.

Let me make my case with an example that I have discussed in detail elsewhere (e.g., Bohnemeyer 1998b). Yukatek Maya lacks lexical exponents of the putative primes AFTER and BEFORE. There are more specific expressions that incorporate the relevant temporal relations (adverbs with meanings such as 'yesterday', i.e., the day BEFORE the day of utterance, or 'formerly', i.e., BEFORE coding time), but there are no adverbs, connectives, or tenses that encode ordering relations between two arbitrary events or time intervals. The "genius" of this language involves a pragmatic style of dealing with event order whereby aspectual and/or modal information is encoded and Gricean implicatures are relied on to defeasibly convey ordering relations stereotypically associated with the use of such operators. The nature of this type of inferences is readily illustrated with English examples; for instance, the combination of progressive and simple tense in (2) invites an implicature to simultaneity:

(2) Cliff was analyzing a color term. The phone rang.

That the representation of meanings as pervasive in discourse as the simple order relations AFTER and BEFORE can be left systematically to pragmatic mechanisms (with local exceptions in certain contexts, as mentioned above) was suspected before (e.g., Durie, Daud, & Hasan 1994: 191) but to my knowledge never conclusively established

before Bohmeyer (1998b, 2002). There is no doubt, in my view, that these relations are conceptual universals; however, the conceptual simplicity of the temporal domain, the complementarity of aspectual operators and order relations, and the availability of predictable default interpretations due to general principles of conversational inferencing render the lexicalization of order relations optional.

But lexicalization in the temporal domain is by no means impoverished in Yukatek; there are Yukatek operators that have no English counterparts. Thus, there is the terminative aspectual verb *ts'o'k*. Like *end*, *finish*, and *complete* (cf. Freed 1979), *ts'o'k* entails completion of events denoted by telic complements, but unlike the former (*The ball stopped/*finished rolling*), *ts'o'k* is compatible with atelic complements as well. Moreover, *ts'o'k* occurs freely with punctual complements, a quite peculiar phenomenon from an Indo-European perspective (e.g., 'The balloon's bursting ended'). An approximate English gloss of this verb might be 'become over', or 'pass in time'.

Goddard (2001: 47-49) suggests that *ts'o'k* is really the Yukatek exponent of AFTER. I had thought to have defeated this analysis before, on the basis of examples such as (3):¹

- (3) a. Pedro=e' sáansamal=e' le=k-u=ts'o'k-ol
 Pedro=TOP RED:tomorrow=TOP DET=IMPF-A.3=end-INC
 u=ts'íib-t-ik hun-p'éeł kàarta=o',
 A.3=write-APP-INC(B.3.SG) one-CL.IN letter=D2
 k-u=ts'u'ts'-ik hun-p'éeł chamal.
 IMPF-A.3=suck-INC(B.3.SG) one-CL.IN cigarette
 'Pedro, every day, it being finished his writing a letter, he smokes a cigarette.'
- b. Pedro=e' sáansamal=e'
 Pedro=TOP RED:tomorrow=TOP
 le=k-u=ts'u'ts'-ik hun-p'éeł chamal=e',
 IMPF-A.3=suck-INC(B.3.SG) one-CL.IN cigarette=TOP
 k-u=ts'o'k-ol u=ts'íib-t-ik hun-p'éeł kàarta.
 IMPF-A.3=end-INC A.3=write-APP-INC(B.3.SG) one-CL.IN letter
 'Pedro, every day, smoking / having smoked a cigarette, it finishes his writing a letter.'

The gerunds in the first clauses of the English translations ('it being finished', 'smoking/having smoked') are meant to render the fact that the corresponding Yukatek clauses are subordinate and adjoined to the clauses they precede. The example shows that *ts'o'k* cannot represent the order of the writing and smoking events independently of the order of clauses; in (a), the most likely interpretation is that the writing preceded the smoking, whereas (b) suggests that the smoking overlapped with the completion of the letter.

Goddard remains unconvinced, pointing out that *ts'o'k* might mean different things depending on whether it occurs in the main clause (b) or in the subordinate clause (a). There is no evidence to support this; the contributions *ts'o'k* and the subordinate

¹ Abbreviations: 3 – 3rd person; A – Cross-reference set A; APP – Applicative; B – Cross-reference set B; CL – Classifier; D2 – Distal/anaphoric; DET – Determiner; IMPF – Imperfective; IN – Inanimate; INC – Incomplete; RED – Reduplication; SG – Singular; TOP – Topic.

clauses make to the sentence meanings are exactly the same across (3a-b). The subordinate clauses encode background information that constrains reference in the main clauses. The only sensible interpretation in (3) is that the subordinate clauses determine the ‘topic time’ (Klein 1994) of the sentences; but the construction will be interpreted differently in other contexts (cf. Bohnemeyer 1998a). Moreover, if the topicalized clauses in (3) are replaced by independent clauses, thus breaking down the two examples into two independent sentences each, native speakers come up with the exact same preferred interpretations regarding the order of events (finishing the letter before smoking in (a); smoking and then completing the letter in (b)). There is thus no reason to suspect that *ts’o’k* might not mean exactly the same in (3a) and (b); and if it does, its contribution to the truth conditions of the utterances in (3) cannot possibly be that of an exponent of AFTER. This illustrates the method of ‘truth conditional reduction’ mentioned above. Paired with Gricean pragmatic analysis – of which it is an indispensable prerequisite – this tool affords the discovery of crosslinguistic differences in semantic representations that are difficult to establish in NSM, where the pressure of strong universalist hypotheses is not quite checked by equally strong methodological standards, so to speak.

But the argument does not end there. Goddard also suggests that the compatibility of *ts’o’k* with punctual complements excludes its analysis as an aspectualizer. I agree that Indo-European languages lack equivalents of *ts’o’k*; however, compatibility with punctuals also applies to all three textually frequent ingressive phase verbs of Yukatek (not just to *ho’p’* ‘begin’, which Goddard mentions, apparently suggesting it might be a lexicalization of BEFORE). Now consider Wierzbicka’s (1988: 78-81) reductive paraphrases of *begin* and *stop*:

- (4) at moment *t*, *X* began to do *Z*. =
 before *t*, *X* wasn’t doing *Z*
 at *t*, *X* was doing it
 one could think at that time:
 more of it will happen after now
- (5) at time *t*, the rain stopped. =
 before *t*, it was raining
 at *t*, one could not know this:
 more of it will not happen after now
 after *t*, more of it didn’t happen

It is not obvious to me that AFTER and BEFORE are conceptually simpler than the meanings of phase verbs like *stop* and *begin* – I tend to think the opposite is the case. Consider (6), in the spirit of (4)-(5):

- (6) after it rained, the sun shone. =
 at some time, it stopped raining
 at that time, the sun began to shine

There are reasons why one might hesitate to postulate a prime STOP for English; for instance, as mentioned above, in combination with telic predicates, *stop* does not mean the same as *end*, *finish*, and *complete* – and the latter are not compatible with atelic predicates. Also, the reduction in (6) would fail for punctual clauses (*After the dam broke, the valley was flooded*). It seems that the prime required by a decomposition of *after* is not STOP or END, but TS’O’K. But TS’O’K is not lexicalized in English, just as AFTER isn’t in Yukatek! One way out of this dilemma may be to adopt an alternative to

the SLH first proposed, to my knowledge, by Harkins & Wilkins (1994: 304): what if semantic primes are like phonological features, in that there is a universal superset of which different languages may select different coherent subsets? One intriguing consequence of this move is that it generates entire classes of readily testable typological predictions. For example, we might predict that if a language has no lexical exponent of a particular prime, it likewise has no grammatical exponent of it. Order relations such as AFTER and BEFORE are grammaticalized in tense morphemes; it follows that if a language fails to lexicalize AFTER and BEFORE, that language will be tenseless. The prediction is borne out for Yukatek and Acehnese (Durie, Daud, & Hasan 1994), and I'm unaware of clear counterexamples. A number of tenseless Oceanic languages have generic temporal connectives ('when'), but lack exponents of AFTER and BEFORE (cf. Bauer 1993: 59-74, 414-437 on Maori and Dixon 1988: 69-73, 165-169 on Boumaa Fijian; the same seems to apply in Samoan (Mosel 1994: 349-354)). The inverse is, of course, not predicted; and indeed, there are tenseless languages that have lexical expressions of AFTER and BEFORE (e.g., Li & Thompson 1981: 184, 633-634, 640-643 on Mandarin).

To summarize, NSM differs from other mentalist frameworks in its insistence in the universal explicability of sense, with only very few principled exceptions, lexical primes, which are hypothesized to be universally lexicalized. I remain skeptical as to the prospects of empirical verification of these hypotheses. But I believe that both could spin off extremely intriguing new research programs under the adoption of more rigorous standards of evaluation for the reductive paraphrase technique. The first of these addresses the question which kinds of meanings are directly projected from other faculties of cognition and which are recast linguistically, so to speak; the second explores the conditions under which particular meanings are lexicalized across languages.

References

- Austin, J. L. 1962. *How to do things with words*. Oxford: Oxford University Press.
- Bauer, W., with W. Parker and T. K. Evans. 1993. *Maori*. London: Routledge.
- Bierwisch, M. 1996. How much space gets into language? In Bloom, P., M. A. Peterson, L. Nadel, and M. F. Garrett (eds.), *Language and space*. Cambridge, MA: MIT Press. 31-76.
- Bohnenmeyer, J. 1998a. Die Stellung sententialer Topics im Yukatekischen [The place of sentential topics in Yukatek grammar]. In Zaefferer, D. (ed.), *Deskriptive Grammatik und allgemeiner Sprachvergleich* [descriptive grammar and general language comparison]. Tübingen: Niemeyer. 55-85.
- 1998b. Temporal reference from a Radical Pragmatics perspective: Why Yucatec does not need to express 'after' and 'before'. *Cognitive Linguistics* 9/3: 239-282.
- 2002. *The grammar of time reference in Yukatek Maya*. Munich: LINCOM.
- 2003. The unique vector constraint: the impact of direction changes on the linguistic segmentation of motion events. In van der Zee, E. and J. Slack (eds.), *Representing direction in language and space*. Oxford: Oxford University Press. 86-110.
- Bohnenmeyer, J. and Swift, M. D. in press. Event realization and default aspect. *Linguistics and Philosophy*.

- Deacon, T. W. 1997. *The symbolic species*. New York: Norton.
- Dixon, R. M. W. 1988. *A grammar of Boumaa Fijian*. Chicago: University of Chicago Press.
- Durie, M., Daud, B. and Hasan, M. 1994. Acehnese. In Goddard and Wierzbicka (eds.), 171-201.
- Fauconnier, G. 1997. *Mappings in thought and language*. Cambridge: Cambridge University Press.
- Fodor, J. A. 1975. *The language of thought*. Cambridge, MA: Harvard University Press.
- 1981. *Representations*. Brighton: Harvester.
- 1983. *The modularity of mind*. Cambridge, MA: MIT Press.
- Freed, A. 1979. *The semantics of English aspectual complementation*. Dordrecht: Reidel.
- Goddard, C. 1994. Semantic theory and semantic universals. In Goddard and Wierzbicka (eds.), 7-30.
- 1998. *Semantic analysis*. Oxford: Oxford University Press.
- 2002. The search for the shared semantic core of all languages. In Goddard and Wierzbicka (eds.), 5-40.
- (ed.) 1997. Studies in the Syntax of Universal Semantic Primitives. Special issue of *Language Sciences*, 19/3.
- Goddard, C. and Wierzbicka, A. (eds.) 1994. *Semantic and lexical universals*. Amsterdam: Benjamins.
- 2002. *Meaning and universal grammar*. Amsterdam: Benjamins.
- Grice, H. P. 1989. *Studies in the way of words*. Cambridge, MA: Harvard University Press.
- Harkins, J. and Wilkins, D. P. 1994. Mparntwe Arrernte. In Goddard and Wierzbicka (eds.), 285-310.
- Jackendoff, R. 1983. *Semantics and cognition*. Cambridge, MA: MIT Press.
- 1990. *Semantic structures*. Cambridge, MA: MIT Press.
- 1997. *The architecture of the language faculty*. Cambridge, MA: MIT Press.
- 2002. *Foundations of language*. Oxford: Oxford University Press.
- Jakobson, R. 1960. Closing statement: Linguistics and poetics. In T. Sebeok (ed.), *Style in language*. Cambridge, MA: MIT Press. 398-429.
- Kay, P. and McDaniel, C. 1978. The linguistic significance of the meaning of basic color terms. *Language* 54: 610-646.
- Klein, W. 1994. *Time in language*. London: Routledge.
- Lakoff, G. 1987. *Women, fire, and dangerous things*. Chicago: University of Chicago Press.
- Langacker, R. 1987. *Foundations of Cognitive Grammar*. Stanford, CA: Stanford University Press.
- Levinson, S. C. 1997. From outer to inner space: Linguistic categories and nonlinguistic thinking. In Pederson, E, and J. Nuyts (eds.), *Language and conceptualization*. Cambridge: Cambridge University Press. 13-45.
- 2000. *Presumptive meanings*. Cambridge, MA: MIT Press.
- Li, C. N. and Thompson, S. A. 1981. *Mandarin Chinese*. Berkeley: University of California Press.
- Löbner, S. 2002. *Understanding semantics*. London: Arnold Publishers.
- Mosel, U. 1994. Samoan. In Goddard and Wierzbicka (eds.), 331-360.

- Pinker, S. 1989. *Learnability and cognition*. Cambridge, MA: MIT Press.
- Wierzbicka, A. 1972. *Semantic primitives*. Frankfurt: Athenäum.
- 1985. *Lexicography and conceptual analysis*. Ann Arbor: Koroma.
- 1988. *The semantics of grammar*. Amsterdam: Benjamins.
- 1996. *Semantics*. Oxford: Oxford University Press.